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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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JOHN P. O'BANION
O'BANION & RITCHEY LLP
SUITE 1550
400 CAPITOL MALL
SACRAMENTO CA 95814

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/813,446	Applicant(s) Olav Solgaard et al.
	Examiner John D. Lee	Art Unit 2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 31-94 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 31-94 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5,6,7

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

The preliminary amendment filed along with this application has been entered. Original claims 1-30 have been canceled, and new claims 31-94 are now pending.

The eight (8) sheets of formal drawing filed with this application are acceptable.

The abstract of the disclosure should be revised to more accurately describe the invention that is being claimed herein. See MPEP § 608.01(b).

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 77-94 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In lines 6-7 of each of the independent claims 77-79 and 86-88, there is no antecedent support for the term "said optical beam", thus rendering these claims (along with all claims dependent thereon) indefinite. This problem could be obviated by changing the term to --an optical beam--.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 31-36, 41-50, and 55-58 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent 5,581,643 to Wu. Wu discloses an optical switch comprising a two-dimensional array of actuated mirrors which can be configured for switching an optical beam from any input port to any output port. Since each mirror in the Wu array is individually addressable, the switch can be configured to have a specific mirror to receive an optical beam from a corresponding one specific input port, or to have a specific output port receive an optical beam from a corresponding one specific mirror in the array.

Claims 59-64 and 69-76 are rejected under 35 U.S.C. § 102(e) as being clearly anticipated by U.S. Patent 6,212,309 to Nguyen et al. It is acknowledged that the effective date of this reference is February 6, 1998, which is later than applicant's claimed domestic priority date of February 13, 1997. The Examiner, however, has not yet been able to study the provisional application upon which priority is based in order to perfect the early date. It is anticipated that such study will be done forthwith. If applicant is indeed entitled to the domestic priority date of February 13, 1997, U.S. Patent 6,212,309 to Nguyen et al will be removed as a reference. Nguyen et al discloses an optical switch comprising an input array of actuated mirrors spatially separated from an output array of

actuated mirrors (see Figures 7 and 8), the input and output mirror arrays being able to be configured such that an optical beam can be switched from any input port to any output port. Since each mirror in the Nguyen et al arrays is individually addressable, the switch can be configured to have a specific mirror to receive an optical beam from a corresponding one specific input port, or to have a specific output port receive an optical beam from a corresponding one specific mirror in the arrays. Similarly, since each mirror is individually addressable, the switch can be configured to have an input array mirror steer an incident optical beam to any, but not more than one for a given setting, output array mirror, or to have an output array mirror set to receive an optical beam from any, but not more than one for a given setting, input mirror.

Claims 37-40 and 51-54 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,581,643 to Wu in view of U.S. Patent 5,255,332 to Welch et al. Wu does not disclose any means for positioning an optical beam onto the array of actuated mirrors (e.g. imaging means or lenses), but it is clear that something must guide the optical beam(s) into the correct position(s) so that efficient switching can occur. Welch et al teaches that the use of lenses as means for positioning optical beams onto reflective/diffractive switching elements of an optical array type switch was well known in the art at the time of applicant's invention. Because of the necessity of use of such positioning means, as just discussed, the person of ordinary skill would have found it obvious to use lens imaging means (as taught by Welch et al) in the array switch of Wu.

Claims 65-68 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,212,309 to Nguyen et al in view of U.S. Patent 5,255,332 to Welch et al. Nguyen et al does not disclose any means for positioning an optical beam onto the array of actuated mirrors (e.g. imaging

means or lenses), but it is clear that something must guide the optical beam(s) into the correct position(s) so that efficient switching can occur. Welch et al teaches that the use of lenses as means for positioning optical beams onto reflective/diffractive switching elements of an optical array type switch was well known in the art at the time of applicant's invention. Because of the necessity of use of such positioning means, as just discussed, the person of ordinary skill would have found it obvious to use lens imaging means (as taught by Welch et al) in the array switch of Nguyen et al.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR § 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR § 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR § 3.73(b).

Claims 31-94 are further provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 31-64 of copending Application No. 09/849,096. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons. The chart set forth below shows the correspondence of the claims from the present application and the claims from copending Application No. 09/849,096. The claims differ only semantically (i.e. the various use of the words "an", "any", "at least one") and effectively claim the same invention. There is no patentable distinction between the respective sets of claims.

U.S. Application No. 09/813,446	U.S. Application No. 09/849,096
31-36	31-32
37-38	33-34
39-40	35-36
41-44	37-40
45-50	41-42
51-52	43-44
53-54	45-46
55-58	47-50
59-64	51-52
65-66	53-54
67-68	55-56
69-76	57-64

In addition, claims 77-94 of the present application are not patentably distinct from the claims of copending Application No. 09/849,096 since they recite combinations of other claims in the present application, as follows (which claims were all covered in the above chart).

Claim Number Herein	Same as Combination of Claims
77-79	67 + 71
80	67 + 71 + 68
81	67 + 71 + 72
82	67 + 71 + 73
83	67 + 71 + 74
84	67 + 71 + 75
85	67 + 71 + 76
86-88	67 + 74
89	67 + 74 + 68
90	67 + 74 + 75
91	67 + 74 + 76
92	67 + 74 + 69
93	67 + 74 + 70
94	67 + 74 + 71

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 83 is additionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, and 4 of U.S. Patent No. 6,289,145. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference is that the patent claims recite input and output optical fibers, whereas the present application claims recite input and output ports. It is clear from both the present application and U.S. Patent No. 6,289,145, however, that input and output ports in the optical switch preferably take the form of optical fibers. To the person of ordinary skill in the art, this would not be a patentable distinction.

All of the prior art documents cited and/or submitted by applicant in the Information Disclosure Statements filed on March 20, 2001, May 7, 2001, and May 29, 2001 (including the U.S. Patents relied on in the rejections above), have been considered and made of record (note the attached copy of forms PTO-1449).

Applicant is cautioned to maintain clear lines of distinction between the claims of this application and those of the copending applications mentioned on page 1 of the specification. All of these applications will be checked carefully for potential double patenting situations.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35

U.S.C. §§ 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (703) 308-4886. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (703) 308-0956, to the technical support staff supervisor (Team 2) at telephone number (703) 308-3072, or to the Technology Center 2800 Customer Service Office at telephone number (703) 306-3329.

John D. Lee

John D. Lee
Primary Patent Examiner
Group Art Unit 2874